

# Notice of Allowability

Application No.

10/657,668

Examiner

Filip Zec

Applicant(s)

MAIER-LAXHUBER ET AL.

Art Unit

3744

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 6/21/2004.
2. ☒ The allowed claim(s) is/are 1 and 3-14.
3. ☒ The drawings filed on 08 September 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).


\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

- |   |   |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|   | 9. <input type="checkbox"/> Other _____   |

  
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Application Serial No.: 10/657,668  
Amdt. dated June 17, 2004  
Reply to Office Action of May 17, 2004

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) An adsorption cooling apparatus with an intermittently heated adsorbent container containing an adsorbent that exothermically adsorbs a working medium during an adsorption phase and with addition of heat again desorbs during a subsequent desorption phase at higher temperatures and with a condenser that leads condensed working medium through a connection line to an the evaporator which is in turn connected with the adsorbent through a working medium vapor line and which takes up heat from the medium to be cooled during the adsorption phase, wherein the condenser is disposed within ~~coupled to~~ a buffer reservoir having a reservoir medium contained therein that buffers at least a part of the condensation heat of the working medium vapor and that can again dissipate the stored heat into the surroundings even during the adsorption phase.
2. (Currently Canceled)
3. (Original) An adsorption cooling apparatus according to Claim 1, wherein the evaporator is arranged in the upper region of the medium to be cooled and the medium that is being heated during the desorption phase does not mix with the cooler medium located below it because of its lower density.
4. (Original) An adsorption cooling apparatus according to Claim 1, further comprising a cold storing element arranged below the evaporator.
5. (Original) An adsorption cooling apparatus according to Claim 1, wherein during the desorption phase, the medium to be cooled is prevented from exchanging heat with the already cooled medium by means of a shutoff device.
6. (Original) An adsorption cooling apparatus according to Claim 1, wherein the desorption heat that is added during the desorption phase is input by a burner.
7. (Original) An adsorption cooling apparatus according to Claim 1, wherein the adsorbent contains zeolite and the working medium contains water.

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8. (Original) An adsorption cooling apparatus according to Claim 1, wherein a condensate is collected in a condensate buffer at a lower level, and is drawn into the higher level of the evaporator at the beginning of the adsorption phase.

9. (Currently Amended) An adsorption cooling apparatus with an intermittently heated adsorbent container containing an adsorbent that exothermically adsorbs a working medium during an adsorption phase and with addition of heat again desorbs during a subsequent desorption phase at higher temperatures and with a condenser that leads condensed working medium through a connection line to an evaporator which is in turn connected with the adsorbent through a working medium vapor line and which takes up heat from the medium to be cooled during the adsorption phase, wherein the condenser is coupled to a buffer reservoir that buffers at least a part of the condensation heat of the working medium vapor and that can again dissipate the stored heat into the surroundings even during the adsorption phase, and ~~An adsorption cooling apparatus according to Claim 1,~~ wherein the evaporator contains wetting agents which effect a homogeneous distribution of the liquid working medium inside the evaporator.

10. (Currently Amended) An adsorption cooling apparatus with an intermittently heated adsorbent container containing an adsorbent that exothermically adsorbs a working medium during an adsorption phase and with addition of heat again desorbs during a subsequent desorption phase at higher temperatures and with a condenser that leads condensed working medium through a connection line to an evaporator which is in turn connected with the adsorbent through a working medium vapor line and which takes up heat from the medium to be cooled during the adsorption phase, wherein the condenser is coupled to a buffer reservoir that buffers at least a part of the condensation heat of the working medium vapor and that can again dissipate the stored heat into the surroundings even during the adsorption phase, and ~~An adsorption cooling apparatus according to Claim 1,~~ wherein the working medium vapor line contains a regulation element which narrows the flow cross section when the evaporator temperatures are too low.

11. (Original) An adsorption cooling apparatus according to Claim 10, wherein the regulation element contains a bimetal element.

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12. (Original) An adsorption cooling apparatus according to Claim 1, further comprising a radiation screen arranged below the evaporator.

13. (Currently Amended) A method for the operation of an adsorption cooling apparatus with an intermittently heated adsorbent container containing an adsorbent that exothermically adsorbs a working medium during an adsorption phase, and that, with addition of heat, again desorbs during a subsequent desorption phase at higher temperatures, and with a connected condenser disposed within a buffer reservoir and that leads condensed working medium into an evaporator which is in turn connected with the adsorbent through a working medium vapor line, wherein the desorption phase has less than one-third the duration of the adsorption phase, and that the condensation heat is buffered during the desorption phase by a heat reservoir medium contained within the buffer reservoir, and that most of the buffered heat is again dissipated during the adsorption phase.

14. (Original) A method for the operation of an adsorption cooling apparatus according to Claim 13, wherein during the desorption phase, which is caused by a high heating power, a temperature gradient of more than 100 K between the heat uptake surface and the heat release surface is produced inside the adsorbent.